Work Order II May-30-12 7:53:54 A		V	*	*8151	9*						Page 1
tem ID: D350 Revision ID: U/R	0-748-101 stube Installation, High Fw /12 Start Qty: 1	.00	*1* *1*	*	Cust Item I		იი*		Stop	*N:	S1* S2*
Approvals: Pro	cess Plan:	Date:	Toolii SPC (ate:		Ru	n Start Stop	*N *N	R1* R2*
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Item ID: Revision ID: Item Name:	D350-748-10 U/R) l allation, High Fwd		Accept	*N900	040	100)*	Setup St		NS NS	31* 32*
Start Date: Required Date Reference:	3/15/12	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item Customer:					3		1/
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March-15-12 8:43:17 AM Item ID: D350-748-101 Accept *N900040100* Setup Start **Revision ID:** U/R Item Name: Crosstube Installation, High Fwd **Start Date:** 15/03/2012 Start Qty: 1.00 **Cust Item ID:** Req'd Qty: 1.00 **Required Date:** 04/04/2012 **Customer:** Reference: Run Start Process Plan: Date: Approvals: Tooling: Date: Stop QC: SPC (Y/N): Date: Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Reject Accept Reject Insp. **Work Center ID** Description **Run Hours** Code Qty **Qty** Number Stamp 130 0.00 Crosstubes *130* Crosstubes Memo 12-5-12 Crosstubes 1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B &C Drill Jigs, Set-up drill table as per OSI 010 2-Deburr 3-Engrave Part # and Batch # as per Dwg D350-748-141 4-Remove all marks from tube within limits of D350-748-141 5- Apply a light coat of LPS3 on the interior of tube Batch: NA 140 QC5- Inspect part completeness to step on W/O QC Memo Quality Control CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

W/O:						V	VORK OR	DER CHA	ANGES					The same
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Page 4 March-15-12 8:43:17 AM Item ID: D350-748-101 Accept *N900040100* **Revision ID:** U/R Crosstube Installation, High Fwd Item Name: **Start Date:** 15/03/2012 Start Qty: 1.00 **Cust Item ID: Required Date:** 04/04/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: Date: Approvals: **Tooling:** Date: Stop Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject Insp. Work Center ID Description **Run Hours** Code Qty Qty Number Stamp 150 Outsource process-Cadplate per QSI017 4.1.9.1 0.00 *150* CX 12/06/04 (C) Outsource3 0.00 Memo Outsource process - Cad plate Issue P/O: Stress relief at 375° for 5 hours Magnetic Particle Inspect per ASTM E1444 Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2 Embrittle relief at 375° for 8 hours, Chromate Treat Possibe Supplier: Southwest United Industries Ensure Certificate of Conformity is attached Receive & Inspect for Damage & Mat'l Certs 0.00 *160* Packaging 0.00 Memo Packaging Ensure certificate of conformity is attached 0.00 Solucio 170 QC5- Inspect part completeness to step on W/O *170* OC 0.00 Memo - STOR WO CHG, OVER Quality Control POSITIVE RECALL

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	_	Description of NC		Corrective Action Section B		Verification	Approval	Approval
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Page 5

March-15-12 8:43:17 AM D350-748-101 Accept Item ID: *N900040100* Setup Start U/R **Revision ID:** Crosstube Installation, High Fwd Item Name: **Start Date:** 15/03/2012 Start Qty: 1.00 **Cust Item ID:** Req'd Qty: 1.00 **Required Date:** 04/04/2012 **Customer:** Reference: Run Process Plan: Approvals: Date: Tooling: Date: Stop QC: SPC (Y/N): Date: Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Reject Accept Reject Insp. **Work Center ID** Description Qty Code **Run Hours** Qty Number Stamp 180 0.00 SprayPaint *120* SprayPaint 00 - B 12 1746 < Finish: 1:15 Spray Painting 1-Prime inside crosstube as per QSI 005 4.2 2-Prime Outside of Tube as per Dart QSI 005 4.2 - B121625 Start: 5:15 190 QC14- Inspect Spray Paint 0.00 *10N* QC 0.00 Memo Quality Control Then, Wrap in plastic bag to protect from scratches 200 0.00 Crosstubes *200* Crosstubes Memo Crosstubes 1-Install Ground wire Insert, then insert screw and washer 2-Install Abraision strips as per Dwg D350-748-141 & QSI 035. 3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-

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	15/03/2012	allation, High Fwd Start Qty: 1.00 Req'd Qty: 1.00	*1 *1		*N90004010 Cust Item ID: Customer:	N *	Setup	Start Stop	*N.S	\$1* \$2*
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Item ID: D350-748-101 Accept *N900040100* Setup Start **Revision ID:** U/R Crosstube Installation, High Fwd **Item Name:** Start Qty: 1.00 **Start Date:** 15/03/2012 **Cust Item ID:** Req'd Qty: 1.00 **Required Date:** 04/04/2012 **Customer:** Reference: Run Process Plan: Date: **Tooling: Approvals:** Date: QC: Date:_____ SPC (Y/N): Date: Sequence ID/ Tool ID Reject Operation Tool # Plan Reject Set Up/ Accept Insp. **Work Center ID** Description Qty Qty **Run Hours** Code Number Stamp 240 0.00 Packaging *240* Packaging 0.00 Memo Packaging Identify and pack for shipping as per PPP D350-748-101 Location: PPP Rev: 250 QC21- Final Inspection - Work Order Release 0.00 MUJ 12/06/26 12-06-25 *250* 0.00 Memo Quality Control

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March-15-12 8:43:21 AM

Work Order ID: 81519

81519

Location

Parent Item:

D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 15/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev.A New Issue 06-07-05 JLM

IPP Rev:B Update qty of MS21042L5 06-09-12 KJ

IPP Rev:C Rev B 07-11-15 DD

IPP Rev D Combined manufacturing 08.04.02 EC verified by: DD IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC

10.08.04 added QSI010 4.3 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Statu Issued	ıs
D350-748-141TRN		Manufactured	No	B7467	· · · · · · · · · · · · · · · ·	110	Each	0.0000	1	1 -	TW 1	2-5-10	
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Work Order ID: 81519 Parent Item: D350-748-101		*815 *D35	19* 0-748-	101*						`
Parent Item Name: Crosstube Insta	llation, High Fwd						art Date: 15 tart Qty: 1.0		Required Date: 04/04/20 Required Qty: 1.00	2
D2856-400 *D2856-400* Abrasion Strip	Manufactured	No		200	f	199.5445	1.181 **	1.243158	M12 06 24	
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Picklist Print March-15-12 8:43:21 AM	· · ·		.					Page 5
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DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Sec Action Description Chief Eng	ction B				Approval Chief Eng	Approval QC Inspector
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DART AEROSPACE LTD	Work Order:	8/5/9.
Description: Crosstube High Fwd (AS350/355)	Part Number:	D350-748-101
Inspection Dwg: D350-748-141 Rev: F		Page 1 of 1

Beno.

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77 ·
Total Span	81.56	82.04

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QC15 Inspection	8
Date	17/15/11

Rev	Date	Change	Revised by	Approved
Α	07.02.06	New Issue	KJ/JM	
В	10.08.23	Dwg Rev updated	KJ 1∆.	li
С	11.11.07	Dwg Rev updated	KJ OK	<i>M</i>
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W/O:		WORK ORDER CHANGES	
DATE	STEP		Date Qty Chief Eng / Approval OC Inspector

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Item	Qty -141	Part Number	Description				
1	х	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)				
2	1	D6015-125	CROSSTUBE (OR D6017-115)				
3	2	D3502-1	SUPPORT				
4	2	D2856-400-710	ABRASION STRIP				
5	1	AELS-1032-225	INSERT				
6	- 1	NAS1149D0363J	WASHER (OR AN960JD10)				
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)				
8	1	MS27039-1-10	SCREW				

GENERAL NOTES:

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В

1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115

FINISHED LENGTH = 110.270±0.06

2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2 CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF PER DART QSi 044 6.4 (VIBRATING STYLUS)
- WEIGHT: 30,45 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0,297 HOLE.
- BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- - 11) HEAT TREAT TO MIN. 180 KSI. PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO VERIFY TENSILE STRENGTHBY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
 - 12) INSTALL D2 856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
 - 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
 - 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

SHOP COPY RETURN TO ENGINEERING UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE WORK CROBER MLJ

> UNDER REVIEW Q11.07.12

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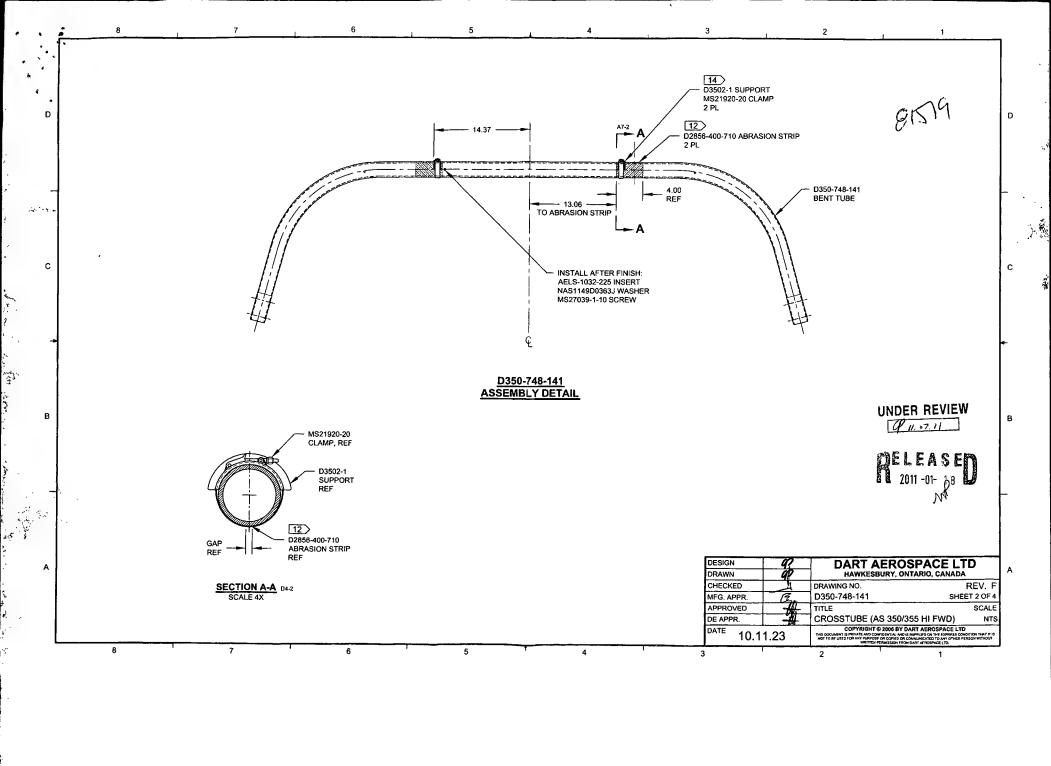
В

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	СР	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
С	ADD CAD PLATING	CP	06.08.14
В	ADD D6017-115 & PRIME AND PAINT	СР	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE

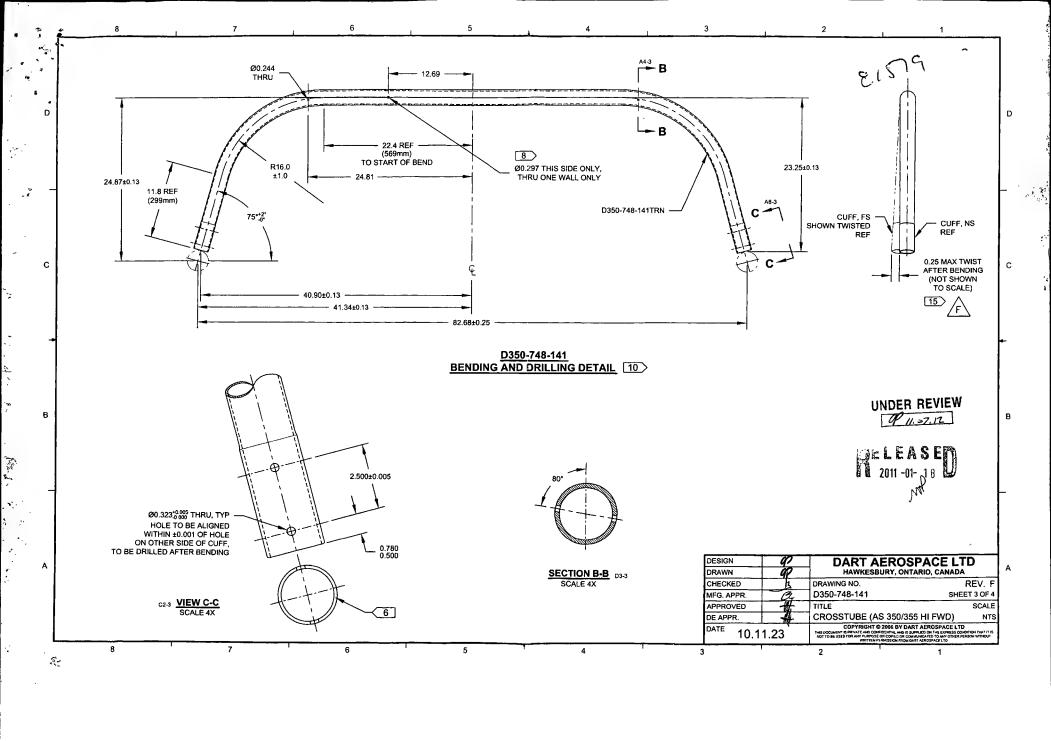
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CHECKED		DRAWING NO.	REV. F				
MFG. APPR.	E	D350-748-141 sh	EET 1 OF 4				
APPROVED	1/4	TITLE	SCALE				
DE APPR.	#	CROSSTUBE (AS 350/355 HI FWD) NTS					
DATE 10.11	1.23	COPYRIGHT © 2006 BY DART AEROSPACE L THIS DOCUMENT IS PRIVATE AND COMPINENTM, AND IS SUPPLIED ON THE EXPRESS NOT TO BE USED FOR ANY PURPOSE OR COPIED ON COMMUNICATED TO ANY OTHER	COMPLICATION THAT IT IS				

Dart	Aeros	pace	Ltd
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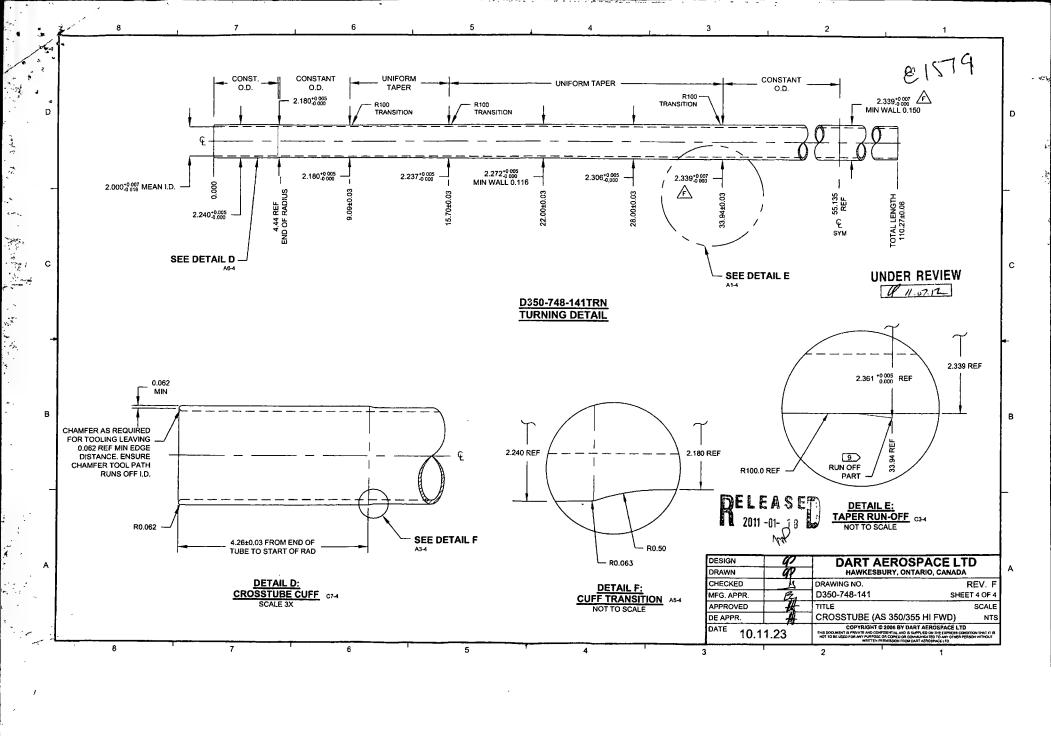


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Metcor Inc. 560, boul. Arthur-Sauvé St-Eustache (Québec) J7R 5A8

Certificat de le conformité entificate of Compliance 201491-6454

BON DE TRAVAIL order	CHARGEMENT load
175926	1

CLIENT / customer 215 DART AEROSPACE 1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

Metcor Inc.

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON KBA 1K7

to the same	COMMANDE DU CLIENT	BONDE LIVRAISON DU CLIENT Customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'i heat code	NUMÉRO DE LOT lot number
	16954		Steel		

SPÉCIFICATIONS DU PROCEDE

processing specifications

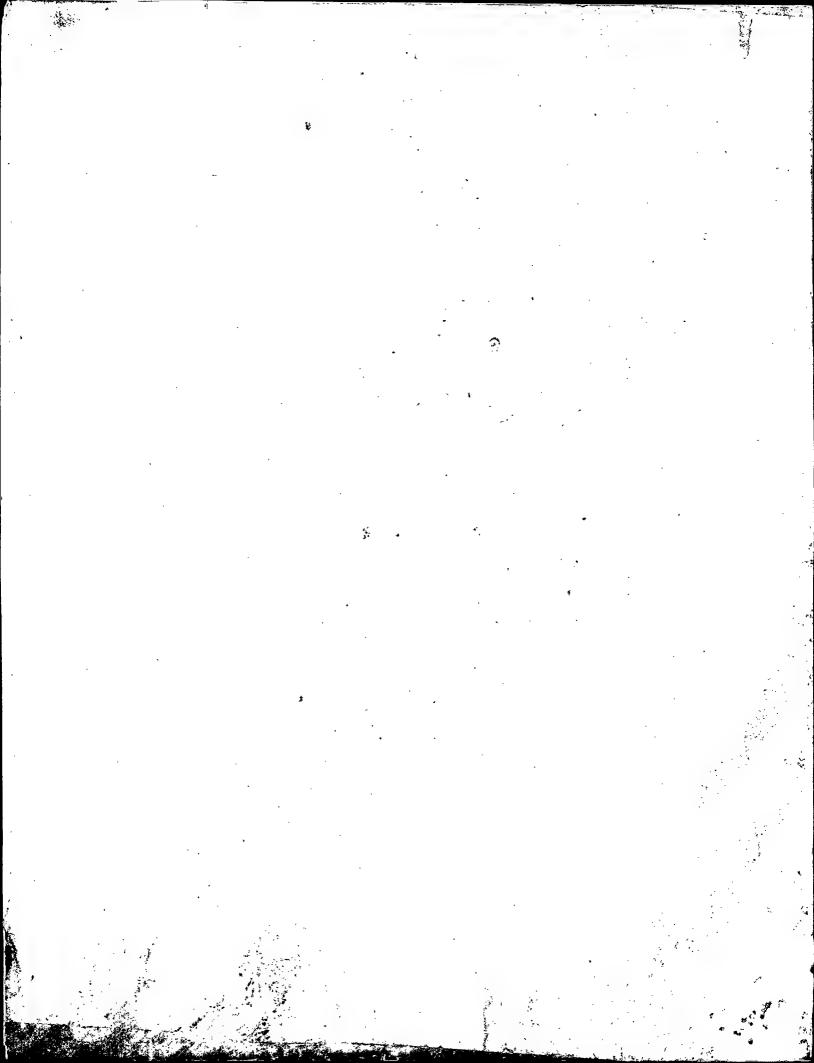
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EXIGENCE / requirement SPÉCIFICATIONS / specifiedTESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results

Visual

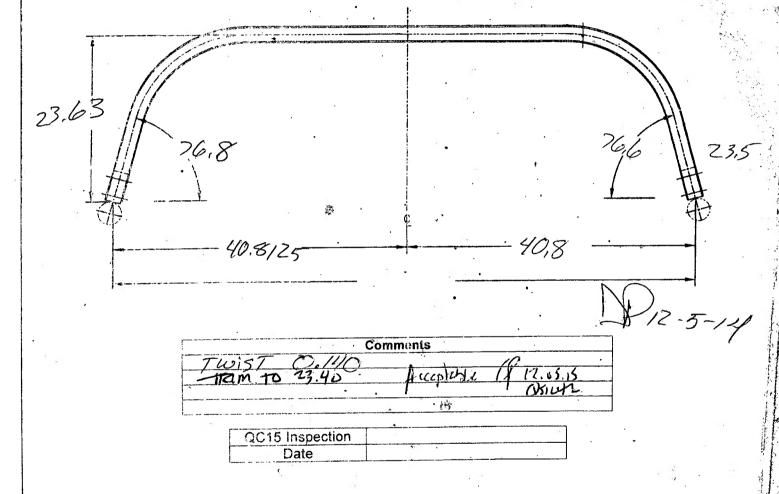
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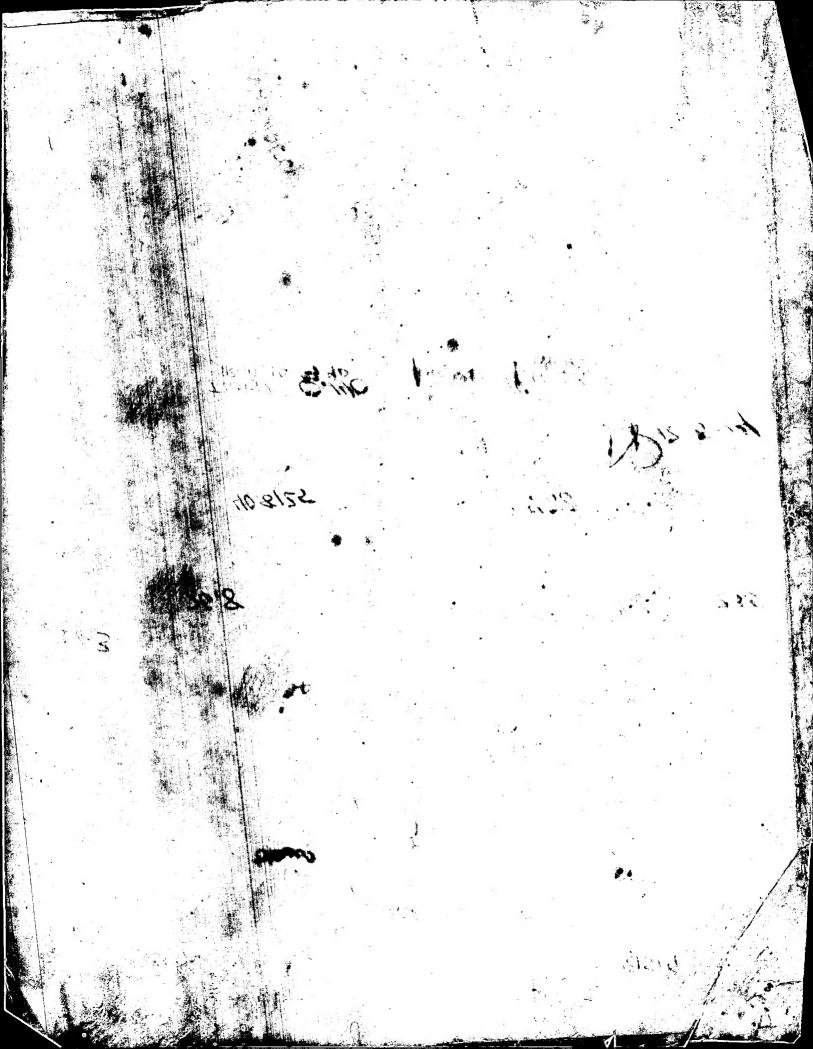
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Description: Crosstube High Fwd (AS350/355)	Part Number:	D350-748-101
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Inspection Dwo: D350-748-141 Rev: F		Page 1 of 1

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Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Rev	Date	Change	Revised by	Approved
Δ	07.02.06	New issue	KJ/JM	1 02
R	10.08.23	Dwg Rev updated	KJ 1∆.	14
 	11 11 07	Dwg Rev updated	KJ 🕬	M



CERTIFICATE OF CONFORMANCE

CADORATH PLATING CO. LTD. 2150 LOGAN AVENUE WINNIPEG, MANITOBA R2J-0J1

DATE:

Jun-12-2012

CONSIGNED TO: Dart Aerospace Ltd.

1270 Aberdeen St.

'Hawksbury, ON K6A 1K7

W/O #:

114972

INVOICE #:

QTY

60875

CONTRACT OR

PURCHASE ORDER #

PO17084

DESCRIPTION:

CROSSTUBE

P/N # d350-748-101

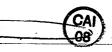
S/N # 81519

STRESS RELIEVE HEAT CHART # 12-546. MPI-IAW ASTM-E-1444. CADMIUM PLATE IAW AMS-QQP-416C TYPE 2 YELLOW CLASS. BAKE HEAT CHART # 12-573, MPI IAW ASTM-E1444.

17/04/18

CERTIFICATE: I certify that the items indicated here on have been inspected and tested and conform to all specifications and requirements detailed on the contract or purchase order.

Approved Inspector:



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La cment of A	curen Group Inc. to perform services extends only to s. comments and expressions of opinion reflect the con- wearranties. Acuren Group Inc. is not assuming any mation provided by Acuren Group Inc. In no event services provided, Acuren Group Inc. uses the degrant in intended by Acuren Group Inc.	responsibilities of the ownerfold to shall Acuren Group Inc.'s liability in	respect of the services rep	ces by others performing such se	rvices in the same or simila	r locality. An inter-
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